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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/551,053

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Dov Avni

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1500 Broadway
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EXAMINER

BRUTUS, JOEL F

ART UNIT

PAPER NUMBER

3768

MAIL DATE

DELIVERY MODE

06/04/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/551,053	Applicant(s) AVNI ET AL.	
	Examiner JOEL F. BRUTUS	Art Unit 3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 81-100 is/are pending in the application.
- 4a) Of the above claim(s) 86-89 and 92-96 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 81-85, 90, 91 and 97-100 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :4/24/2009, 10/27/2008, 6/18/2007 and 9/23/2005.

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group 1, claim(s) 81-85, 90-91 and 97-100, drawn to an in vivo imaging device with a controller to control the image gain level.

Group 2, claim(s) 86-89 and 92-96, drawn to an in vivo imaging device with a controller that operates a light source to provide a dark frame.

2. The inventions listed as Groups 1 and 2 do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The claim invention is not novel because the claimed subject matter is known in the art, See Nagasaki et al. Nagasaki et al disclose an endoscope having a solid state image pick-up for receiving an image from a subject to be examined that is pertinent to the claimed invention. Nagasaki et al further teaches an endoscope that includes an illuminating source for projecting light onto the subject, a first level detector for detecting a level of a video signal supplied from the solid state image pick-up device; a first level comparator connected to the first level detector for comparing the level of the

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signal detected by the first level detector with a preset first reference level and generating a first control signal in accordance with the level difference [see abstract].

3. During a telephone conversation with Caleb Pollack on 5/14/2009 a provisional election was made without traverse to prosecute the invention of group 1, claims 81-85, 90-91 and 97-100. Affirmation of this election must be made by applicant in replying to this Office action. Claims 92-96 and 86-89 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Specification

5. Applicant is reminded of the proper language and format for an abstract of the disclosure. Applicant submits a copy of a PCT publication. Applicant is required.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The

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abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 81-85, 90-91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagasaki et al (US Pat: 4,631,582) stand alone and/or in view of Alfano et al (US Pat: 6,240,312).

Regarding claim 81-85, Nagasaki et al teaches an endoscope having a solid state image pick-up for receiving an image from a subject to be examined that is pertinent to the claimed invention. Nagasaki et al further teaches an endoscope that includes an illuminating source for projecting light onto the subject, a first level detector for detecting a level of a video signal supplied from the solid state image pick-up device; a first level comparator connected to the first level detector for comparing the level of the signal detected by the first level detector with a preset first reference level

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and generating a first control signal in accordance with the level difference [see abstract].

Nagasaki et al further teaches a light controller connected to the output of the first level comparator for controlling the amount of light emitted from the illuminating source based on the first control signal [see abstract]. The endoscope also includes a gain-variable amplifier for receiving and amplifying the video signal from the solid state image pick-up device, a second level detector connected to the gain-variable amplifier for detecting the level of the signal therefrom, and a circuit connected to the second level detector for comparing the level of the signal detected by the second level detector with a preset second reference level and generating a second control signal in accordance with the level difference there between and providing the second control signal as a gain controlling signal to the gain-variable amplifier [see abstract].

Nagasaki et al teaches an illuminating means which illuminates a subject to be observed and has a light adjusting function and a gain control means which controls the amplitude of the signal obtained by a solid state image pick-up device such as CCD [see column 4 lines 5-11]. Nagasaki et al also teaches the output of the comparator is integrated for a 1 frame period by integrator [see column 2 lines 48-49].

Nagasaki et al discussing light control in illuminating means is accomplished by using an independent signal level for each primary color signal. That is, the signal level of point during the red signal period, the level of Point P.sub.G during the green signal period, and the level of Point P.sub.B during the blue signal period are used as the signal to be compared by first comparator amplifier. For this reason, the blue

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signal with the weakest spectral luminous efficiency can be controlled on basis of the signal of the smallest level at Point P.sub.B, and its light controlling rate is higher than for the red signal period and green signal period. During the green signal period with the strongest spectral luminous efficiency, the light control occurs with a larger decrease in the brightness level than for the red signal and blue signal [see column 6 lines 3-30].

Nagasaki et al doesn't teach a photodetector.

However, Alfano et al teaches a vivo device that comprises a light source, a photodetector [see fig 11 b].

Therefore, one with ordinary skill in the art at the time the invention was made would have been motivated to combine these references by measuring light using a photodetector; in order to measure light with great accuracy.

Regarding claims 90-91, Nagasaki et al teaches at least a light source [as taught above]; a comparator, a gain control means, image pick up means to record images , at least one light detector [as taught above]. Nagasaki et al teaches comparing a measured or recorded light with a preset level or reference signal [see above]. A light controller is connected to the output of comparators for controlling the amount of light emitted from the illuminating source based on the control signal [see abstract].

Nagasaki et al teaches imaging period such as during the green signal period with the strongest spectral luminous efficiency, the light control occurs with a larger decrease in the brightness level than for the red signal and blue signal [see column 6 lines 3-30].

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The sampling instance as claimed is in fact the sampling period. Nagasaki et al teaches period as blue, red and green.

Nagasaki et al doesn't assign a specific time to each sampling period (in this case its color period).

However, an artisan at the time the invention was made could assign a time for example 3 milliseconds to each period or 3 ms for blue period, 4 ms for red period and 6 ms for green period; for the purpose of knowing the specific location of the device as it advances into the body; for examples, in blue period the device is diagnosing the esophagus, green the small intestine etc...

8. Claims 97-100 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagasaki et al (US Pat: 4,631,582) stand alone and/or in view of Alfano et al (US Pat: 6,240,312) as applied to claims 81 and 90 above, and further in view of Iddan et al (US Pat: 5,604,531).

Regarding claim 97-100, all other limitations are taught as set forth by the above combination.

The above combination is silent to measuring environmental parameter such pH level and environmental measuring tool (like pH sensor, temperature sensor etc...).

However, Iddan et al an in vivo video camera system typically comprises a swallowable capsule for viewing inside the digestive system and for transmitting at least video data, a reception system, and a data processor for processing video data and a storage unit [see column 3 lines 12-16].

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The capsule typically comprises a light source (FIG.2), a viewing window through which the light illuminates the inner portions of the digestive system, a camera system, such as a charge-coupled device (CCD) camera, which detects the images, an optical system which focuses the images onto the CCD camera system, a transmitter which and a power source [see column 3 lines 28-34]. The capsule can additionally include sensor elements for measuring pH, temperature, pressure, etc. These sensor elements are described in the prior art [see column 3 lines 38-39].

Therefore, one with ordinary skill in the art at the time the invention was made would have been motivated to combine these references by using pH sensor and/or temperature sensor as taught by Iddan et al; for the purpose of properly illuminating the region of interest while having the capability to monitor the effect on the surrounding tissues; thereby minimizing or eliminating damages to healthy tissues.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOEL F. BRUTUS whose telephone number is (571)270-3847. The examiner can normally be reached on Mon-Fri 7:30 AM to 5:00 PM (Off alternative Fri).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571)272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. F. B./
Examiner, Art Unit 3768

/Long V Le/
Supervisory Patent Examiner, Art Unit 3768